Engineering Evaluation
Pacific Gas and Electric Company
Plant #24, Hunters Point
Application # 6811
Regulation 2, Rule 9
Alternative Compliance Plan

BACKGROUND

At the time Regulation 2-9 was adopted, 23 utility boilers at four facilities owned and operated by PG&E were subject to Regulation 9-11. However, three facilities were sold and transferred to Mirant (formerly Southern Energy Delta) on April 16, 1999. PG&E retained ownership of the Hunters Point facility with the five boilers (S-3, 4, 5, 6, 7) and was subject to the Advanced Technology Alternative Emission Control Plan (ATAECP "system-wide emissions bubble") of Regulation 9-11, Section 309. Under the ATAECP, the individual boilers are not required to comply with a specific emission limit, but a system-wide average. The current system-wide average NO_x limit is 0.057 lb/MMBtu for 2002 and 2003. Future limits will be ratcheted down over the years to 0.037 in 2004 and to the final limit of 0.018 lb/MMBtu in 2005 and thereafter.

In March 2001, four of the five boilers were permanently shutdown at the HPPP facility. Only Unit 7 remains in operation. PG&E has also entered into an agreement with the City and County of San Francisco regarding the future shutdown of the entire Hunters Point facility. However, before the HHHP facility may be shutdown, the California Independent System Operators and Federal Energy Regulatory Commission must first authorize PG&E to terminate the "Reliability Must Run" Contact.

This application is for an Alternative Compliance Plan (ACP), which would allow PG&E to utilize existing Interchangeable Emission Reduction Credits (IERCs) to demonstrate compliance with the new, more stringent, NOx limits.

SUMMARY

PG&E's Hunters Point Power Plant Boiler No. 7 is subject to BAAQMD Regulation 9-11, which regulates NOx emissions from electric power generating steam boilers. On January 1, 2004, Section 9-11-309.1 requires PG&E to comply with a NOx emission rate limit of 0.037 lb NOx/ million Btu heat input and the limit is further reduced to 0.018 lb/MMBtu-hr on January 1, 2005, and, thereafter.

PG&E plans to shut down this aging power plant as soon as other reliable sources of power are on-line. PG&E has been able to reduce emissions from this boiler through relatively inexpensive changes to combustion controls and equipment. Further reductions would require the installation of very expensive tailpipe emission control systems. If PG&E has to invest in controls for this facility, PG&E will need to continue operating the facility in order to recoup its investment.

District Regulation 2-9 provides a mechanism for PG&E to comply with Regulation 9-11-309.1 without installing additional controls, at least for a limited time. Regulation 2-9 allows a facility to generate Interchangeable Emission Reduction Credits (IERCs) by over complying with current requirements. The IERCs generated by over compliance may be used to offset emissions that exceed new, tighter limits from future rules. A 10% Environmental Benefit Surcharge ensures that the environment, and the public, benefit from the transaction.

PG&E has submitted an application for Alternative Compliance Plan, which will allow them to continue to operate Boiler No. 7 after the new limits become effective. Under this plan in 2004, PG&E may use up to 100 tons of IERCs previously generated by emission reductions at Hunters point to offset emissions that exceed the new 9-11 NOx limits.

The plan cannot result in an increase in emissions over baseline levels.

Pursuant to the California Environmental Quality Act (CEQA), the District has completed an initial study of the potential impacts of this project, and has determined that there are no potentially significant environmental impacts. CEQA requires the preparation of a negative declaration for this project. The applicant, however, has requested that the District prepare an Environmental Impact Report. The District has prepared a draft EIR, at the applicant's request, even though it is not required under CEQA.

In November 2001, the BAAQMD APCO approved the PG&E IERC application for both the Potrero (Application No 22441) and Hunters point (application No. 22504) facilities. The requested credits were for emission reductions due to combustion controls implemented at HHHP and Potrero.

Facility	Certificate	Generation Period	Certificate Expiration	Tons NOx (as NO_2)
Potrero	**6-A**	**1/1/97-12/31/97**	**1/1/98-1/31/02**	**145.9**
	6-B	**1/1/98- 12/31/98**	**1/1/99-1/31/03**	**233.7**
	6-C	**1/1/99- 4/16/99**	**4/17/99-4/16/04**	**31.8**
Hunters Point	**7-A**	**1/1/97-12/31/97**	**1/1/98-1/31/02**	**409.5**
	7-B	**1/1/98- 12/31/98**	**1/1/99-1/31/03**	**455.3**
	7-C	**1/1/99- 12/31/99**	**1/1/00-12/31/04**	**262.7**

AVAILABLE IERCS

PG&E has generated and banked IERCs from the Potrero and Hunters Point Power Plants as shown in the above table. Several community and environmental groups challenged the issuance of the IERCs to PG&E by filling an appeal to the BAAQMD Hearing Board (Docket No. 3364). PG&E reached a settlement agreement with these groups regarding the banking and use of IERCs. In the settlement agreement, PG&E agreed to relinquish all of the IRECs represented by Certificates 6-A, 6-B, 6-C, 7-A, 7-B and 7-C except for 100 tons of IERCs represented by Certificate 7-C. PG&E further agreed to use no more than 100 tons of IERCs in 2004.

IERCs expire five years following their effective date. The IERCs represented by Certificate 7-C became effective January 1, 1999 and will expire December 31, 2004. BAAQMD has canceled Certificate 6-A, 6-B, 6-C, 7-A, 7-B and 7-C and has reissued a new Certificate 7-D reflecting the 100 tons of remaining IERCs with a December 31, 2004 expiration date. PG&E has recently submitted an application for further IERCs that, if issued, would be usable in later years.

REGULATION 9-11

An Alternative Compliance Plan (ACP) must satisfy all the requirements of Rule 2-9-303 before the IERCs may be used to comply with Regulation 9-11.

ALTERNATIVE COMPLIANCE PLAN

Under the Alternative Compliance Plan (ACP), PG&E will use as much as 100 tons of NOx IERCs from Certificate 7-D. As much as 91 tons of NOx reductions would otherwise be required under Regulation 9-11. Regulation 9-11 limits the average NOx emission rate on an hourly basis; the ACP must also show hourly compliance. PG&E will be required to calculate actual daily NOx emissions, and compare those emissions with the allowable emissions under Regulation 9-11. Offsets will be provided (at a 1.10 to 1 ratio to make up any shortfall).

Actual emissions for a source with a CEM

1. Measure hourly average NOx ppm concentration (C_{NOX}) and percent CO_2 ($\%CO_2$) using Continuous Emissions Monitoring (CEMs);
2. Calculate the emissions rate using the formula $E = 1.194 \times 10^{-7} \times C_{NOX} \times 1040 \times 100/\%CO_2$ in lb/MMBtu[1];
3. Measure hourly natural gas fuel usage, and convert to heat (H) in MMBtu.
4. Multiply the heat (H) times the emission rate (E) to obtain the emissions in lbs.

Reg. 9-11 allowable emissions

1. Measure hourly usage of type of fuel;
2. Multiply fuel usage by heat content for fuel to obtain heat release;
3. Multiply total heat release by Reg. 9-11-302 limit of 0.037 of NOx (as NO_2)/ MMBTU for 2004.

Amount of IERCs consumed

1. Calculate actual emissions for the affected source on hourly basis;
2. Calculate allowable emissions for the affected source on hourly basis;
3. If total hourly actual emissions are less than or equal to allowable emissions, sources comply with Reg. 9-11 without using IERCs for that hour;
4. If total hourly emissions are greater than allowable emissions, subtract allowable emissions from actual emissions to obtain the amount of IERCs consumed for that hour;
5. Multiply the hours IERCs by 1.1 to include the 10% environmental benefit surcharge.

PG&E will operate the HPPP electric generating facility only to the extent required by the California Independent System Operator (ISO) and to meet its obligations under its "Reliability-Must Run" Contact while complying with Regulation 9, Rule 11-309.1. There are no plans to use any IERCs in 2003, and the proposed ACP restricts use to no more than 100 tons in 2004.

This plan only covers calendar year 2004. PG&E has indicated that it will submit another plan to cover 2005. PG&E submitted application No 7375 to apply for IERCs that will be used in future plans.

[1]Re: 40 CFR Part 75, Appendix F – Conversion Procedure Equation F-6

STATEMENT OF COMPLIANCE

An Alternative Compliance Plan must satisfy the requirements of Regulation 2, Rule 9-303 in order to comply with a NOx rule in Regulation 9-11. PG&E's ACP complies with Regulation 2-9, Section 303 as indicated below.

303.1 Only IERCs that have been generated, approved, and banked in accordance with this rule may be used in an ACP.

The IERCs that will be used under this ACP will include only those generated, approved and banked in accordance with the provisions of Reg. 2-9.

303.2 NOx emissions from each source or group of sources (if grouping is allowed under the applicable emission standard) in the ACP, less IERCs applied, shall not exceed that amount or level of NOx emissions, which would result if the affected source or sources complied with the applicable BARCT requirements of Regulation 9 on a daily basis.

The ACP will track actual and allowable emissions on an hourly basis. If actual emissions exceed allowable, PG&E will be required to provide IERCs for the difference, plus an environmental benefit surcharge of 10%.

303.3 The ACP must be reviewed and approved by the APCO on an annual basis.

The initial review of this ACP is being conducted under this application. The ACP will be reviewed annually hereafter.

303.4 The ACP must include methods for demonstrating compliance on a daily basis, by listing:

4.1 All sources covered by the ACP;

The proposed includes a list of all sources (i.e. Source No. S-7) covered by the ACP.

4.2 Maximum firing rate (higher heating value) of each source;

The proposed ACP includes maximum firing rate (higher heating value) for each source.

4.3 Type(s) of fuel and heat content (higher heating value) of each fuel combusted in each source;

The propose ACP includes the type(s) of the fuel and heat content (higher heating value) of each fuel combusted in each source (see below).

Source No:	S-7
Boiler No.	7
Max. Firing rate:	1720 MMBTU/hr
Fuel type:	natural gas only
Higher Heating Value:	1040 BTU/CF

4.4 NOx emission rate for each type of fuel combusted in each source;

The NOx emission rate will be determined on an hourly basis using data from the CEMS on Boiler 7. HPPP emission rates will be calculated using its NOx Compliance Monitoring System computer.

4.5 A comparison of the actual nitrogen oxide emission rate and the nitrogen oxide emission rate that would be allowed under the applicable BARCT provision(s) of Regulation 9, in the absence of this rule, for each source, or group of sources (if grouping is allowed under the applicable emission standard),

The attached Table 1 shows hypothetical exemplar compliance tracking data for Regulation 2-9. Each hour, the actual total mass NOx emissions for the boiler will be listed in the table and compared to the allowable amount under BARCT (0.037 lb/MMBU for 2004. The IERCs required (including the 10% surcharge required by Regulation 2-9-306) for hourly compliance plus the running balance of available IERCs are shown in the next columns. This spread sheet will be kept in the control room at the power plant and will be available for District inspection.

4.6 Detailed calculation of the amount of IERCs required for BARCT compliance, in accordance with the procedure in Section 2-9-605;

Actual hourly NOx mass emissions and fuel throughput are taken from the Continuous Emission Monitoring System. Compliance with Rule 9-11 will be determined based on hourly calculation of the total NOx mass emission rate (lb) of the affected boiler divided by the actual fuel throughput (MMBTU). Allowable hourly mass emissions are determined by multiplying the actual throughput (MMBTU) by the allowable emission (0.037 lb NOx (as NO_2)/MMBTU for 2004). For each hour in which actual emissions are not greater than allowable emissions, no IERCs are needed to achieve compliance. For each hour in which the opposite is true, the amount of IERCs is needed to comply with Regulation 2-9 will be determined by subtracting allowable emissions from actual emissions and then applying the environmental benefit surcharge by multiplying by one to one and one tenth (1: 1.1).

The daily total will be determined by summing up the hourly totals. The attached Table 1 illustrates all of the above calculations. Start-up and shutdown allowances all will be treated as provided in Regulation 9-11.

The hourly IERCs will be totaled on a monthly basis. PG&E will submit quarterly status reports regarding the ACP. Following the end of the 1-year ACP period, PG&E will be required to surrender the amount of IERCs needed for compliance within 30 days.

303.6 Failure to comply with any emission calculation, emission testing, monitoring, record keeping or reporting provision of an approved plan, or failure to surrender sufficient IERC banking certificates within 30 days following the end of the ACP period, shall constitute a violation of the applicable Regulation 9 BARCT Rule(s).

Regulation 2, Rule 9, Section 502 Alternative Compliance Plan Record Keeping and Reporting

Section 502.1: The information required in subsection 2-9-303.4 shall be available for inspection by the APCO on each production or operation day.

The owner/operator shall keep information on site of each operating day on site and make such information be available for inspection by the District inspection staff.

Section 502.2: The person submitting the ACP shall retain records for five years from the date the record was made and shall submit such information as required by the APCO to determine compliance with the ACP.

The owner/operator shall keep all records on site for at least 5 years.

Section 502.3: The ACP shall include [a requirement for] quarterly reports submitted to the APCO, within 30 days following the end of each calendar quarter, or other 3-month interval established in the plan.

In Each quarterly report the owner/operator shall include:
3.1 A summary of the amount of IERCs used during the preceding quarter;

3.2 A running total of all IERCs used during the current ACP period;
3.3 A projection of the amount of IERCs that will be needed for the entire ACP period, based on the IERCs usage rates calculated in Section 502.3.1 and 502.3.2; and
3.4 Certification that the facility possesses IERCs equal to the amount projected in Section 502.3.3 or a description of how the facility will adjust its operation so that the amount of IERCs needed does not exceed the amount of IERCs possessed by the facility.

The owner/operator shall submit these quarterly reports within 30 days following the end of each calendar quarterly and shall include all the above information.

Section 502.4: Within 30 days following the end of the ACP period, the owner/operator of the facility shall submit an annual reconciliation report summarizing the amount of IERCs used during the preceding 12-mont ACP period, and shall surrender the banking certificate(s) for all IERCs used during the ACP period plus the applicable environmental benefit surcharge.

The owner/operator shall submit annual reconciliation reports within 30 days of the end of each 12-month ACP period, and banking certificates shall be surrendered as required.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

The California Environmental Quality Act (CEQA) requires environmental review for projects developed or approved by California state, regional, or local government. PG&E has submitted this permit application to the District for approval. This permit application does not qualify under any of the CEQA exemptions contained in Regulation 2-1-311 (ministerial exemption), Regulation 2-1-312 (categorical exemption), or Section 15061 of the State CEQA Guidelines. The District is not aware of any other public agency that will be preparing a Negative Declaration or EIR for this project. Accordingly, the District is the Lead Agency for this project under CEQA.

The District has received from the applicant a completed, signed and dated preliminary environmental study as required by Regulation 2-1-426.1, with information equivalent to that contained in Appendix H of the State CEQA Guidelines. Therefore, the application is deemed complete for CEQA purposes.

In October 2002, PG&E entered into an agreement with Communities for a Better Environment, Southeast Alliance for Environmental Justice, Bayview Hunters Point Community Advocates, and Literacy for Environmental Justice regarding the banking and usage of IERCs in an effort to expedite closure of Hunters Point Power Plant. To implement that agreement, PG&E agreed to prepare an environmental impact report for any ACP application for Hunters Point Power Plant. This agreement, of course, does not affect the District's responsibility as lead agency under CEQA to determine whether or not a CEQA Environmental Impact Report (EIR) should be prepared.

The District has prepared an Initial Study, dated June 2, 2003, on this proposed project. The purpose of an Initial Study is to provide the District with information to use as the basis for deciding whether to prepare an EIR or Negative Declaration under CEQA. Based on the Initial Study, the District has determined that there is no substantial evidence that the project or any of its aspects may cause a significant effect on the environment. Pursuant to the State CEQA

Guidelines Sections 15063 (b)(2) and 15064 (f)(3), the District should prepare a Negative Declaration for this project. However, the applicant has requested that the District prepare an Environmental Impact Report for the project. Because the applicant has made the request and bears the burden of the resulting cost and delay, the District will grant the request.

Upon the air pollution control officer's (APCO's) approval of the preliminary decision to approve the Advanced Technology Alternative Emission Control Plan (ATAECP) and its related CEQA documents, the District will circulate the CEQA documents for public review as part of the regular 30-day public notice stating the preliminary decision of the APCO. All comments received on the CEQA documents will be considered and responded to. The final action by the District to approve or deny the ATAECP will be taken only after this information and the comments received during the public review process are reviewed and considered by the APCO.

The District has prepared a draft Environmental Impact Report for this project, which will be subject to public review along with this Preliminary Decision to Approve the Advanced Technology Alternative Emission Control Plan (ATAECP) to allow Pacific Gas & Electric to use IERCs to comply with the NOx emissions limits in Regulation 9, Rule 11.

PUBLIC NOTICE / COMMENT

Before the District may approve the initial ACP for a source or group of sources, the APCO must publish in at least one newspaper of general circulation within the District a notice stating the preliminary decision of the APCO to approve the ACP (per Reg. 2-9-405). The public comment period shall last at least for 30 days.

PERMIT CONDITIONS

1 The owner/operator shall operate a continuous emission monitor system (CEMS) to measure the NOx and O_2 concentrations from boiler number 7 at Hunters Point Power Plant.

2. The owner/operator shall not use Interchangeable Emission Reduction Credits (IERCs) for Hunters Point Power Plant exceeding 100 tons of NOx (as NO_2) for the year of 2004.

3. The owner/operator shall determine the amount of IERCs necessary for compliance with Regulation 9, Rule 11. To show compliance with Rule 9-11, the owner/operator shall keep a spreadsheet in a District approved format. The spreadsheet must include a running balance of both IERCs consumed and IERCs remaining for each month, actual hourly heat input in million BTU, actual NOx (as NO_2) emissions rates per hour, and allowable NOx (as NO_2) emissions rates based on Regulation 9-11 limits of 0.037 lb/MMBTU for 2004. (Table 1 of the Engineering Evaluation Report AN 6811 in an example of a District approved daily summary spreadsheet format)

4. The owner/operator shall maintain the records of continuous emission monitoring (NOx and CO_2) and fuel usage records for boiler number 7 for a period of at least five (5) years. Such records must be retained for a minimum of 5 years from date of entry and made available to the APCO upon request. These records must include, but are not limited to:

i. The continuous emission monitoring measurements for NOx in ppmvd and pound per hour, and CO_2 in percent.
ii. The type, quantity (Btu/hr), and higher heating valve of fuel burned on an hourly basis.
iii. The results of any performance testing, calibrations checks, zero adjustments, and maintenance of any continuous emission monitors.
iv. The date, time, and duration of any start-up, shutdown, or malfunction in the operation of the unit, emission control equipment, or emission monitoring equipment

5 The owner/operator shall submit quarterly reports to the APCO, within 30 days following the end of each calendar quarter or other 3-month interval established in the plan. Each quarterly report must include:

i Summary of the amount of IERCs used during the preceding quarter;
ii A running total of all IERCs used during the current ACP period;
iii A projection of the amount of IERCs that are needed for the entire ACP period, based on the IERC usage rates calculated in Section 502.3.1 and 502.3.2; and
iv Certification that the facility possesses IERCs equal to the amount projected in Section 502.3.3 or a description of how the facility will adjust its operation so that the amount of IERCs does not exceed the amount of IERCs possessed by the facility

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6 The owner/operator shall submit an annual reconciliation report to the APCO within 30 days of the end each 12-month ACP period, and surrender the banking certificate(s) for all IERCs used during that ACP period plus the applicable environmental benefit surcharge.

RECOMMENDATION

Staff recommends that the APCO approve the Preliminary Decision to approve the Advanced Technology Alternative Emission Control Plan (ATAECP) to allow Pacific Gas & Electric to use IERCs to comply with the NOx emissions limits in Regulation 9, Rule 11.

by: _____ Date: _____
Pamela Leong, Air Quality Engineer II

Table 1

Hypothetical Exemplar Compliance Data

Hunters Point Power Plant, Unit 7

Period from to: 1/1/2004 00-00-00 to 1/1/2004 23:00:00
Applicable Limit 0.037 lb NOx/MMBTU
IERCs available at start for period 200,000 lb NOx

Date and Time	Total MMBTU	NOx lb (as NO_2)	NOx (as NO_2) lb/MMBTU	Allowable NOx (as NO_2) lb	IERCs used in lb	IERCs balance in lb
	Measured	Measured	Calculated	Calculated	Calculated	200,000
01-Jan-04 00:00:00	428.3	11.2	0.026	15.85	0.00	200,000
01-Jan-04 01:00:00	444.0	10.6	0.024	16.43	0.00	200,000
01-Jan-04 02:00:00	450.9	10.27	0.023	16.68	0.00	200,000
01-Jan-04 03:00:00	800.9	25.84	0.032	29.63	0.00	200,000
01-Jan-04 04:00:00	1248.5	49.02	0.039	46.20	3.11	199,996.89
01-Jan-04 05:00:00	517.5	16.37	0.032	19.15	0.00	199,996.89
01-Jan-04 06:00:00	1302.0	55.22	0.042	48.17	7.75	199,989.14
01-Jan-04 07:00:00	1519.0	65.63	0.043	56.20	10.37	199,978.77
01-Jan-04 08:00:00	1577.0	70.88	0.045	58.35	13.78	199,964.99
01-Jan-04 09:00:00	1639.6	74.61	0.046	60.67	15.34	199,949.65
01-Jan-04 10:00:00	1640.0	75.77	0.046	60.68	16.60	199,933.05
01-Jan-04 11:00:00	1642.6	77.04	0.047	60.77	17.89	199,915.16
01-Jan-04 12:00:00	1642.6	77.38	0.047	60.78	18.26	199,896.90
01-Jan-04 13:00:00	1635.0	74.71	0.046	60.50	15.64	199,881.26
01-Jan-04 14:00:00	1641.7	74.70	0.046	60.74	15.35	199,865.91
01-Jan-04 15:00:00	1642.0	74.88	0.045	60.75	15.54	199,850.37
01-Jan-04 16:00:00	1641.8	74.39	0.058	60.75	15.01	199,835.36
01-Jan-04 17:00:00	1642.9	95.3	0.044	60.75	38.00	199,797.36
01-Jan-04 18:00:00	1556.9	69.18	0.043	57.60	12.73	199,784.62
01-Jan-04 19:00:00	735.5	31.78	0.046	27.21	5.02	199,779.60
01-Jan-04 20:00:00	448.3	15.06	0.026	16.59	0.00	199,779.60
01-Jan-04 21:00:00	428.3	11.26	0.023	15.85	0.00	199,779.60
01-Jan-04 22:00:00	445.4	10.32	0.023	16.48	0.00	199,779.60
01-Jan-04 23:00:00	444.5	10.21	0.023	16.45	0.00	199,779.60

IERCs used during period = 220.40
IERCs available end of period = 199,779.60
Includes 10% environmental benefit surcharge required by BAAQMD Rule 2-9-306